IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

REALTIME DATA LLC d/b/a IXO,	§ § §	
Plaintiff,	§ §	Civil Action No. 6:15-cv-463
v.	§ §	JURY TRIAL DEMANDED
ACTIAN CORPORATION and PERVASIVE SOFTWARE, INC.,	§ § §	LEAD CONSOLIDATED CASE
Defendants.	§ § § §	

RIVERBED'S MOTION TO STRIKE THE SUPPLEMENTAL EXPERT REPORTS OF DR. KELLER AND MR. MILLS BASED ON IMPROPER APPORTIONMENT

I.   INTRODUCTION[1]

Although Dr. Arthur Keller's supplemental expert report presents an entirely new theory of apportionment, his new analysis fares no better than his original report, which the Court largely struck.[2] Again Dr. Keller fails adequately to apportion based on the incremental value of the patents relative to the accused products as a whole, as Federal Circuit precedent requires.[3] Further, Dr. Keller's new analysis contradicts his previous analysis, rendering it unreliable. Because Dr. Keller's conclusions are unreliable and legally flawed, they would not be helpful to the jury. Therefore, the Court should exclude Dr. Keller's supplemental report and testimony.

Similarly, despite the Court's instructions in its previous order, Mr. Robert Mills, Realtime's damages expert, again relies solely on Dr. Keller's apportionment factors in determining his royalty base for Riverbed's accused products.[4] In his supplemental report, Mr. Mills presents several pages of purported analysis. But his final conclusion on the proper apportionment of the royalty base once again relies solely on Dr. Keller's opinions. There is no evidence of any substantive independent analysis by Dr. Mills. Further, Dr. Keller's faulty and unsupported conclusions again taint Mr. Mills's opinions. Accordingly, the Court should also

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[1] In support of this Motion, Riverbed relies on its Omnibus Appendix in Support of its Motions for Summary Judgment and Motions to Strike (and supplements) (Dkts. 444, 466, 471), as well as the Third Supplemental Appendix, filed concurrently. Riverbed will cite to its Appendix as follows: App. [page #] (description of evidence where appropriate).

[2] Dkt. 481 (Mem. Op. & Order).

[3] *Id*. at 5, 7-9.

[4] *Id*. at 10-11.

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strike the portions of Mr. Mills's report that rely on Dr. Keller's apportionment factors.

II.   ARGUMENT

Despite being given the opportunity, Dr. Keller's and Mr. Mills's supplements fail to correct the shortcomings of their original reports, which still fail to meet the standards of Rule 702. Specifically, Mr. Mills still relies only on Dr. Keller's analysis for his final apportionment figures. And Dr. Keller again improperly includes the value of non-patented features due to an inadequate comparison of benefits. Further, Dr. Keller's supplemental report provides opinions that are completely contrary to his initial opinions, rendering his opinions unreliable and lacking in credibility. For all of these reasons, both Dr. Keller's and Mr. Mills's supplemental reports should be struck.

A.   Dr. Keller improperly provides the ultimate apportionment value of the accused products.

The Court struck both Dr. Keller's and Mr. Mills's initial opinions because Dr. Keller provided an ultimate apportionment value of the accused products with respect to the patents-in-suit and because Mr. Mills's relied on the technical value Dr. Keller provided to determine a proper apportionment value.[5] The supplemental reports of Realtime's experts do not correct this fatal flaw, but repeat it. In his supplemental report, Dr. Keller opines that a range of 27% to 49% is "one quantification of the incremental value added" by the accused features.[6] Taking

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[5] *Id.* at 10-11.
[6] App. 1204 (Keller Suppl. Rpt. ¶ 74).

these exact figures from Dr. Keller, Mr. Mills opines: "I conclude that the benefit of the combination of deduplication and compression as measured by the 27 percent to 49 percent range . . . represents a reasonable measure by which to apportion revenue from sales of the accused SteelHead products for purposes of determining an appropriate royalty base in this matter."[7]

As Dr. Keller's supplement demonstrates, he has not limited his specific, numerical figures to a technical evaluation—as the Court instructed—but has again strayed into determining economic value.[8] In fact, Dr. Keller specifically states in his report that the 27% to 49% range he calculates demonstrates the "incremental *value* added by" the accused features. "Value" is an inherently economic determination, and therefore one Dr. Keller is not qualified to opine on.[9]

For his part, once again Mr. Mills adopts the figures from Dr. Keller without independent analysis or any adjustment.[10] Mr. Mills does this despite opening his supplemental report by quoting the Court's order that Dr. Keller's apportionment value "may not be the final apportionment value itself."[11] Nonetheless, Mr. Mills's final apportionment figures for his royalty base are the exact same 27% and 49% that Dr. Keller put forward. To be sure, Mr. Mills echoes some of Dr. Keller's analysis in his report—including references to same documents Dr. Keller cited[12]—

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[7] App. 1243 (Mills Suppl. Rpt. ¶ 22).

[8] Dkt. 481 at 10-11.

[9] *Id.* at 10.

[10] App. 1243 (Mills Suppl. Rpt. ¶ 22).

[11] App. 1228 (Mills Suppl. Rpt. ¶ 3) (quoting Dkt. 481 at 10).

[12] *Compare* App. 1203-04 (Keller Suppl. Rpt. ¶ 74) *with* App. 1239-40 (Mills Suppl. Rpt. ¶ 17) (both reports discussing RBT-037639, a Riverbed Data Reduction Study); *compare* App. 1205-11 (Keller

but there is no indication Mr. Mills conducted any independent, ***economic*** analysis.

And the conclusion of Dr. Keller's substantive analysis confirms that Realtime has

failed to correct its previous error:

> I further conclude that, as data reduction is the correct technical metric to measure the performance of the accused products as a whole, the added performance benefit from the combination of SDR and LZ to data reduction is a technically reliable figure for the ***value*** added to the accused products by the combination of the elements of the Patents-in-Suit.[13]

As before, Mr. Mills took Dr. Keller's advice and applied the exact figures Dr. Keller

proposed—not merely as an "input into the damages expert's opinions,"[14] but as the

conclusion of the appropriate apportionment of the royalty base.

Mr. Mills's adjustment to the royalty rate based on *Georgia-Pacific* factors 9

and 13 does not cure this deficiency.[15] Instead, it further condemns Mr. Mills's

apportionment. Although *Garretson*'s apportionment requirement may be met by an

apportioned royalty base, adjustment of the royalty rate, or a combination of the

two,[16] the Federal Circuit has "barred use of too high a royalty base—even if

mathematically offset by a 'low enough royalty rate.'"[17] That is exactly what Mr.

Mills seeks to do here. By decreasing the royalty rate, Mr. Mills asserts a higher

royalty base in his apportionment analysis than would otherwise be accurate. But

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Suppl. Rpt. ¶¶ 75-79) *with* App. 1242-43 (Mills Suppl. Rpt. ¶ 21) (both reports discussing RBT-028362, a Riverbed white paper concerning NetApp SnapMirror); *compare* App. 1211-15 (Keller Suppl. Rpt. ¶¶ 80-83) *with* App. 1241-42 (Mills Suppl. Rpt. ¶ 20) (both reports discussing an IDC white paper).¶

[13] App. 1215 (Keller Suppl. Rpt. ¶ 84) (emphasis added).

[14] Dkt. 481 at 10.

[15] App. 1244-51 (Mills Suppl. Rpt. ¶¶ 23-33).

[16] *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1207, 1226 (Fed. Cir. 2014).

[17] *Rembrandt Social Media, LP v. Facebook, Inc.*, 561 F. App'x 909, 912 (Fed. Cir. 2014) (quoting *LaserDynamics, Inc. v. Quanta Computers, Inc.*, 694 F.3d 51, 67, 68 (Fed. Cir. 2012)).

the increased royalty base risks misleading the jury by "skewing the damages

horizon for the jury" and "making a patentee's proffered damages amount appear

modest by comparison."[18] Essentially, this will allow Realtime to argue to the jury

that they are only entitled to a small percentage of even the apportioned revenue—

an argument that is prejudicial to Riverbed and carries a considerable risk of jury

confusion. Because of this, Mr. Mills's adjusted royalty rate does not compensate for

the lack of any independent economic analysis concerning apportionment of the

royalty base. Lacking such analysis, Mr. Mill's supplemental report should be

struck.[19]

B. Dr. Keller's analysis relies on an inadequate comparison of the benefits of the accused features and improperly captures non-patented functionality.

Dr. Keller's bases his quantitative analysis on a flawed premise: that the

benefit of using the combination of SDR deduplication and LZ compression over LZ

compression alone demonstrates the value of the patents-in-suit.[20] This comparison

is inadequate and not tied to the facts of the case, rendering it irrelevant.[21]

The parties do not dispute that every asserted claim requires two different

compression algorithms and that the accused functionality in the Riverbed

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[18] *Id.*

[19] Mr. Mills's supplemental report addresses both apportionment and convoyed sales. But he applies the same apportionment to both accused products and convoyed sales. App. 1258-59 (Mills Suppl. Rpt. ¶ 44). Because of this, the entire supplemental report is deficient and should be struck. Mr. Mills's apportionment of service revenue should also be struck for the reasons discussed in Riverbed's Motion to Strike Portions of the Supplemental Report of Mr. Mills, filed concurrently.

[20] *See* App. 1203-15 (Keller Suppl. Rpt. ¶¶ 74-84).

[21] *Summit 6, LLC v. Samsung Elecs. Co., Ltd.*, 802 F.3d 1283, 1296 (Fed. Cir. 2015) ("Hence, a reasonable or scientifically valid methodology is nonetheless unreliable where the data used is not sufficiently tied to the facts of the case.").

SteelHead is the combination of SDR deduplication and LZ compression.[22] And comparing the benefit of the combination of SDR deduplication and LZ compression to the use of a single alleged compression algorithm may be a valid apportionment methodology. But, as performed by Dr. Keller (and relied upon by Mr. Mills), the analysis is not tied to the facts at issue, and is therefore irrelevant.

In the quantification leading to his primary apportionment range of 27% to 49%, Dr. Keller compares the reduction in data attributable to the combination of SDR+LZ to the reduction in data attributable to LZ alone.[23] But this comparison ignores the substantial benefit to data reduction provided by Riverbed's proprietary SDR deduplication algorithm. Although the combination of SDR+LZ results in 27% to 49% increase in data reduction compared to LZ alone, Dr. Keller does not—and never even attempts to—measure the incremental benefit of SDR+LZ over SDR alone.[24] Critically, Dr. Keller ignores this comparison despite significant evidence that SDR does the overwhelming portion of the data reduction in the combination of SDR+LZ.

For example, Riverbed conducted tests that isolate the benefit of SDR compared to SDR+LZ.[25] Several Riverbed witnesses testified concerning the slight performance increase attributable to LZ compared to that of SDR, including Thom

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[22] *E.g.*, App. 1174-75 (Keller Suppl. Rpt. ¶¶44-45).

[23] App. 1203-04 (Keller Suppl. Rpt. ¶ 74).

[24] App. 1329-30 (Keller 4/14/2017 Dep. at 6:24-7:3) ("My analysis was on SDR and -- which is deduplication, and LZ compared -- compared to the prior art, which is LZ, I did not give an opinion with respect to the comparison of -- of SDR and LZ compared to SDR alone.").

[25] App. 870-71 (Riverbed Test Results, RBT-067702-03). These tests demonstrate that LZ contributes between 1.0% to 4.9% to SteelHead's use of SDR+LZ. Dr. Keller rejected this evidence as "unreliable." App. 1331 (Keller 4/14/2017 Dep. at 8:7-14).

Van Os, former Riverbed technical staff,[26] and Ryan Damon, Riverbed general

counsel.[27] Similarly, an early Riverbed document discusses the benefit of latency

optimization and data deduplication as making it "possible to increase the

throughput of applications on WANs by up to 100 times or more," but never even

mentions compression.[28] Dr. Keller and Mr. Mills ignore all this evidence.

Further, as an expert in computer science, Dr. Keller should recognize that

the overwhelming majority of SteelHead's data reduction comes from SDR

deduplication rather than LZ compression. A document Dr. Mitzenmacher,

Realtime's other technical expert, uses in teaching courses at Harvard shows that

the best compression ratio for LZ-based compression methods is just under 3:1.[29]

Yet, Dr. Keller cites that the SteelHead's data reduction is "highly scalable with

peak compression ratios that could be 100 to one or higher."[30] Because LZ is

typically incapable of achieving this amount of data reduction, Dr. Keller would

understand that the vast improvement described in Riverbed's literature must come

from SDR deduplication rather than LZ compression. But, along with the other

evidence, he ignores this point as well.

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[26] App. 1334-35 (Van Os Dep. at 147:24-148:12) (LZ provides a "small additional data reduction on data we haven't seen before.").

[27] App. 559 (Damon Dep. at 34:1-22) ("SDR, which is our data deduplication, provides the lion's share of data reduction effectiveness in the product.").

[28] App. 1344-47 (The StoragePort: Wide-area Storage Virtualization and Access Acceleration (RBT-060481) at RBT-060488-491).

[29] App. 1351 (Guy E. Blelloch, Introduction to Data Compression at 7, Oct. 16, 2001, available at http://www.eecs.harvard.edu/~michaelm/CS222/compression.pdf). GZIP—an LZ-based compression scheme—provides a bits-per-character compression ratio of 2.71. Uncompressed text includes 8 bits per character. Dividing 8 by 2.71 yields a compression ratio of 2.952.

[30] App. 1201 (Keller Suppl. Rpt. ¶ 72 (citing Dobies Dep. Tr. at 59:3-19 & Ex. 6)).

Because Dr. Keller ignores the substantial evidence demonstrating the superiority of SDR deduplication over LZ in the accused products, his apportionment—comparing SDR+LZ to LZ only—overstates the alleged value of the patents to the accused products. By failing to consider the contribution of SDR deduplication alone to the amount of data reduction of SDR+LZ, Dr. Keller inherently includes all of the data reduction provided by SDR deduplication alone in his apportionment. This is one of the same errors he made in his first report.[31] And by once again failing to apportion out the value of Riverbed's proprietary deduplication algorithm—which the patents do not and cannot claim—Dr. Keller repeats this error in his supplemental report. As the Court explained, "it is the incremental value added by the combined elements of the patented invention that matters."[32] Because Dr. Keller has not even attempted to isolate this incremental value, his supplemental report should be struck.

C. Dr. Keller's new opinions contradict his earlier analysis.

Despite being given permission to supplement Dr. Keller's report, Dr. Keller's supplemental report provides forty-two paragraphs of new purported analysis spanning forty-two pages. In contrast, Dr. Keller's original report included only eleven paragraphs spanning fewer than five pages. Rather than supplementing based on the Court's striking of portions of Dr. Keller's report, Realtime used this as an opportunity to essentially start from scratch. But in doing so, Dr. Keller offers new opinions that contradict his prior expert report. Providing no basis for these

[31] Dkt. 481 at 8-9.
[32] *Id.* at 8.

abrupt changes in position, these contradictory opinions are inherently unreliable and will not be helpful to the jury.[33] Accordingly, the Court should strike these opinions.

      1.   *Dr. Keller is not clear on whether Application Streamlining and Transport Streamlining are related to the patented functionality, rendering his opinions unreliable.*

In his original report, Dr. Keller opined:

> [T]here are aspects of the Accused Products that do not appear to relate to the patented technology. Specifically, these relate to the transport streamlining and the application-level optimizations. While these comprise two of the three remaining key functions or benefits of the Accused Products, they do not appear to be touted as much as the features that do relate to, or are in some way further advanced by, the patented technology.[34]

Completely changing positions on this point, Dr. Keller's supplement report states:

> While the combination of the SDR and LZ data reduction algorithms supply the vast majority of the "data streamlining" benefits, the combination of SDR and LZ also contribute to "transport streamlining," or speeding up network traffic, by reducing the data that must be transported over the network.[35]

Similarly, Dr. Keller's supplemental report argues:

> Furthermore, the combination of SDR and LZ contributes to "application streamlining" as well. . . . The data reduction from SDR and LZ play a significant role in accelerating application performance because the applications will be transmitting and receiving less data over the WAN.[36]

Also:

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[33] *See Metaswitch Networks Ltd. v. Genband US LLC*, No. 2:14-cv-744, 2016 WL 874772, at *1-2 (E.D. Tex. Mar. 7, 2016) (examining the question of whether an expert's opinions are unreliable or self-contradictory in a motion to strike); *see also ParkerVision, Inc. v. Qualcomm Inc.*, 627 F. App'x 921, 923-24 (Fed. Cir. 2015) (finding that self-contradictory expert statements may not support a jury verdict); *Allergan, Inc. v. Barr Labs., Inc.*, 501 F. App'x 965, 971 (Fed. Cir. 2013) (determining that self-contradictory expert testimony may render an expert not credible and allow a court to assign no weight to his opinions).

[34] App. 429 (Keller Rpt. ¶ 52).

[35] App. 1193 (Keller Suppl. Rpt. ¶ 66).

[36] App. 1195-96 (Keller Suppl. Rpt. ¶ 67).

> I note that I disagree with Mr. Dobies [sic] testimony the combined SDR and LZ are only a part of the "data streamlining" feature. As shown by Riverbed's own technical documents, such as Riverbed's "Module 2: Introduction to WAN Optimization," the combination of SDR and LZ operate by default to reduce data not only for bandwidth streamlining but also for transport and application streamlining.[37]

Besides being *ipse dixit* statements providing no analysis distinguishing between the benefits of the combination of SDR+LZ over a single alleged compression method, Dr. Keller's supplemental report contradicts his original position on the relationship between the allegedly patented technology and the Application Streamlining and Transport Streamlining functionality of the accused products. These statements are therefore unreliable.

2.   *Dr. Keller is not clear on what the purpose of the accused products is, rendering his opinions unreliable.*

Dr. Keller similarly contradicts himself concerning his fundamental understanding of the purpose of the accused products. In his initial report, Dr. Keller reiterated that the accused product's purpose and benefits flowed from accelerating application performance. For example:

- "Indeed, the general purpose and benefits of the Accused Products are 'WAN optimization, speeding up network traffic, and increasing application performance.'"[38]

- "Riverbed witnesses have testified that the Accused Products have *three* primary functions that work to 'accelerate the performance of applications over longer distances' or perform WAN Optimization: application streamlining, data streamlining, and transport streamlining."[39]

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[37] App. 1198 (Keller Suppl. Rpt. ¶ 69).

[38] App. 426 (Keller Rpt. ¶ 47).

[39] App. 426 (Keller Rpt. ¶ 45).

- "WAN optimization solutions, such as the accused Riverbed products, are used to maximize the efficiency of data flow across a WAN in order to increase the speed of access to applications and information by remote users."[40]

- "Again, in its marketing materials, Riverbed claims that the accused Riverbed products can accelerate applications 'by up to 100 times, providing LAN-like application performance regardless of a user's location.'"[41]

Dr. Keller repeated this theme at his deposition. For example:

- "So, for example, Mr. Dobies testified that these -- the accused products have three primary functions that work to accelerate the performance of the applications over longer distances or perform WAN optimization."[42]

- "Well, Mr. Dobies describes the accused products have three primary functions that work to accelerate the performance of applications over longer distances or perform WAN optimization, and that is application streamlining, data streamlining, and transport streamlining."[43]

- The three functions that "are accelerating the performance of applications over longer distances, as Mr. Dobies testified."[44]

- "Q: Why do you think customers buy the Riverbed accused products? A: My understanding is because they want to accelerate the performance of applications over longer distances, in other words, perform WAN optimization. That's the primary reason."[45]

Now, Dr. Keller's supplemental report results in a completely new opinion—data reduction is now the SteelHead's primary function. For example:

- "Riverbed implements less fundamental features designed to address negative effects of latency or poor WAN quality so that Riverbed's

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[40] App. 428 (Keller Rpt. ¶ 49).

[41] App. 429 (Keller Rpt. ¶ 50).

[42] App. 1354 (Keller Dep. Tr. at 141:21-25).

[43] App. 1355 (Keller Dep. Tr. at 144:12-17).

[44] App. 1356 (Keller Dep. Tr. at 150:16-18).

[45] App. 1357-58 (Keller Dep. Tr. at 154:23-155:3).

SteelHead can provide the ***core benefit of data reduction*** to WAN optimization."[46]

- "Above all, it is the data reduction from SDR and LZ by which the functional success of Riverbed's accused products is measured."[47]

- "Riverbed's accused products have the primary technical function of reducing the amount of data transmitted over a network, thereby reducing bandwidth utilization and improving WAN optimization."[48]

This change represents yet another contradiction related to Dr. Keller's fundamental understanding of and opinion on the accused SteelHead products. These contradictions abolish Dr. Keller's credibility and render his opinions unreliable. Based on these contradictions, Dr. Keller's supplemental report should be struck.

III.   CONCLUSION

As in the original reports, Dr. Keller impermissibly provides the ultimate apportionment factors that Mr. Mills uses in his damages report. Also, as before, Dr. Keller's apportionment analysis fails to adequately value the incremental benefit of the patents-in-suit to the accused products. Additionally, Dr. Keller's opinions in his supplemental report contradict his prior opinions, rendering them unreliable and unhelpful. For these reasons, the Court should strike both Dr. Keller's and Mr. Mills's supplemental reports.

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[46] App. 1179 (Keller Suppl. Rpt. ¶ 50) (emphasis added).
[47] App. 1197 (Keller Suppl. Rpt. ¶ 68).
[48] App. 1185 (Keller Suppl. Rpt. ¶ 56).

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing filing was served on all counsel of record for Plaintiff Realtime Data LLC d/b/a IXO via the Court's ECF system in accordance with the Federal Rules of Civil Procedure and Local Rules on April 17, 2017.

/s/ *Matthew P. Chiarizio*